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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,952	03/25/2004	Nelson Diaz	16274.179	6355

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EXAMINER	
VAN ROY, TOD THOMAS	
ART UNIT	PAPER NUMBER
2828	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/05/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/808,952	DIAZ, NELSON	
	Examiner	Art Unit	
	Tod T. Van Roy	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-14 and 22-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-14 and 22-28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities:

Pages 7 and 8 list the PNP transistors found in figure 4, and incorrectly list #350 instead of #370.

Appropriate correction is required.

Response to Arguments

Applicant's arguments filed 12/21/2006 have been fully considered but they are not persuasive.

With respect to claim 9, the applicant has stated that one would not be motivated to use the circuit of Diaz due to the presence of a potential low frequency dip. The examiner does not dispute that the dip may occur, however Diaz describes a solution to this dip is adding a resistor seen in fig.13b #862 ([0089]), which is commonly found in cited fig.13a #822. Thus Diaz poses a simple solution to the problem, which is believed to make the circuit desirable to one of ordinary skill in the art.

The applicant has also stated that duplicating the parts taught by Diaz is not well founded (Remarks, pg.6). The examiner is of the belief that the most obvious way to construct the differential driving technique of Riaziat is to construct a mirrored transistor driving arm to that already disclosed by Diaz. This would be the most apparent modification and therefore is thought to be well founded.

The applicant has further stated that Diaz is not obvious to combine with Riaziat since Riaziat does not teach a clear advantage for use with Diaz (Remarks, pg.7).

Riaziat does teach different advantages and disadvantages of his own circuit at various frequency levels, however it is clearly taught in [0005] of Riaziat that differential driving techniques work well for high speed operation and are well known in the art. Riaziat further teaches the use of a TO can package which would allow for an encapsulated, protected, and portable method of integrating the Diaz circuit into a laser transmitter. For these reasons it is believed that one of ordinary skill in the art would have a reasonable expectation of success to modify the circuit of Diaz to use the differential driving technique of Riaziat.

With respect to claim 11, the applicant has argued that inherency is not established in making the rejection. The examiner firstly notes that inherency alone was not relied upon to make said rejection, and that the rejection made based on the figure of Diaz has not been disputed. That being said, it is still believed that an electrical switch would only open and close in response to a data signal. With no input to the switch no switching action will occur. If input is present the switch would be presented with the ability to change states. This input may be considered a data signal even if it is not called that by name. For that reason, it is believed that the inherency portion of the rejection to claim 11 is still valid.

With respect to claim 12, the applicant has stated that the rejection lacks adequate basis as particular portions of Diaz were not cited. The examiner notes that the rejection was based on the figure cited in the rejection to claim 1 and the operation of the circuit outlined in the abstract of the prior art (note modulation and bias current application).

For the reasons stated above the examiner believes that the current rejections to the claims are obvious to one of ordinary skill in the art, and would be considered reasonable.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-14 and 22-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Diaz in view of Riaziat et al. (US 2003/0138008).

With respect to claim 9, Diaz teaches a laser driver comprising: a PNP transistor current source (fig.13a upper left, also a current mirror), an inductor coupled to the PNP transistor current source (fig.13a #809); a switch coupled to the inductor (fig.13a #838, NPN); and a current sink coupled to the switch (fig.13a #834), wherein the PNP transistor current source supplies a first current to a laser if the switch is closed and a second current to the laser if the switch is open (as this circuit is the same as the claim

limitations, and fig.4 of the applicant's specification, it is inherent that the operation would be the same) and wherein the PNP transistor current source, inductor, switch, and current sink are on a single semiconductor chip ([0030], stating the laser driver may be implemented on a single chip); including a second transistor (NPN) switch (fig.13a #830). Diaz does not teach an additional PNP current source and inductor to be coupled to the second switch, or the laser diode to be driven differentially. Riaziat teaches a laser driver which uses a differentially driven laser diode ([0005]). It would have been obvious to one of ordinary skill in the art at the time of the invention to couple an additional identical PNP current mirror and inductor of Diaz (obvious to duplicate existing parts, see MPEP – 2144.04 VI B – duplication of parts) to the second switch to form the second, identical, transistor driving arm to allow for differential driving of the laser diode (a well known configuration, see Riaziat [0005]) allowing for reduction of parasitics when used in conjunction with transistor outline packaging (Riaziat, [0005]).

Claim 10 is rejected for the same reasons as claim 9 above.

With respect to claim 11, Diaz further teaches the switch to open and close in response to a data signal (fig.13a through input #832, also inherent that a switch would open and close in response to a data signal).

With respect to claim 12, Diaz further teaches that when the switch is closed to drive the laser to output a logic low (only bias applied, logic low) optical signal and the switch is opened to drive the laser to output logic high (both currents applied, logic high).

With respect to claims 13, Diaz further teaches the inductor size influences the frequency response of the PNP current source, and reduces intersymbol interference ([0088-90], also inherent as the circuit and inductor placement are the same as the instant invention).

Claim 14 is rejected for the same reasons as claim 9 above.

With respect to claims 22-28, Diaz and Riaziat teach the laser driver as outlined in the rejection to claim 9, and Diaz further teaches the method of operating the laser driver as in the rejection to claims 15-21, which after the addition of the second PNP current mirror and inductor (with similar operation), would read on claims 22-28.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR

MINSUN OH HARVEY
PRIMARY EXAMINER